

Amendment/Reply

Applicant: Martin Brox

Serial No.: 10/585,151

Filed: October 16, 2007

Docket No.: Q601.131.101/2003P53957US

Title: VOLTAGE REGULATION SYSTEM

REMARKS

The following remarks are made in response to the Final Office Action mailed October 20, 2010 and the Advisory Action mailed January 3, 2011. Claims 1-9, 15, 16, and 27 have been previously cancelled. Claims 10-14, 17-26, and 28-32 were rejected. With this Reply, claims 10, 13, 14, 17-19, 21, 26, 28, 29, and 32 have been amended, claims 12, 20, and 23 have been cancelled without prejudice, and claims 33-35 have been added. Claims 10, 11, 13, 14, 17-19, 21, 22, 24-26, and 28-35 remain pending in the application and are presented for reconsideration and allowance.

Examiner Interview

Applicant thanks the Examiner for the Examiner Interview conducted on January 19, 2011 between Examiner Emily P. Pham and Attorney Mark A. Peterson in which proposed amendments to overcome the current rejections to the claims were discussed. The Examiner agreed that the proposed amendments would overcome the current rejections to the claims. The Examiner indicated, however, that a further search would need to be conducted. Accordingly, the proposed amendments have been incorporated into this response.

Claim Objections

The Examiner objected to claims 17, 18, 26, 28, and 29 due to informalities.

Claims 17, 18, 26, 28, and 29 have been amended to correct the informalities.

Accordingly, Applicant submits that the above objection to claims 17, 18, 26, 28, and 29 should be withdrawn. Allowance of claims 17, 18, 26, 28, and 29 is respectfully requested.

Claim Rejections under 35 U.S.C. § 102

The Examiner rejected claims 10-14, 17-26, and 28-32 under 35 U.S.C. § 102(b) as being anticipated by Morishita, U.S. Patent Application Publication No. 2002/0030538 ("Morishita").

Applicant submits that Morishita fails to teach or suggest the features recited by amended independent claim 10 including "**a further device for generating a variable further voltage**

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from the first voltage or a voltage derived from it to provide the variable further voltage on a second line directly connected to the first line, the variable further voltage tracking the first voltage such that in response to the first voltage rising above the first nominal value, the variable further voltage rises in proportion to the first voltage” and “wherein in the deactivated state, the second voltage is maintained at the second nominal value, and wherein in the activated state, the second voltage rises above the second nominal value in response to the first voltage rising above the first nominal value.”

The Examiner submits that the main amplifier MA and the level adjust circuit 1 in Figure 1 of Morishita disclose the *further device* recited by claim 10. (Final Office Action, page 4). Morishita discloses that the main amplifier MA compares reference voltage Vref and internal power supply voltage IntVcc for supplying a current from external power supply node EXV to internal power line IVL according to the comparison result. (Para. [0058]). Level adjust circuit 1 compares voltage Vref and external power supply voltage ExtVcc for adjusting the amount of current supplied by main amplifier MA from external power supply node EXV to internal power supply line IVL according to the comparison result. (Para. [0059]). Main amplifier MA holds internal power supply voltage IntVcc at the level of reference voltage Vref. (Para. [0018]). Subamplifier SA has the function to suppress reduction of internal power supply voltage IntVcc due to leakage current and the like when main amplifier MA is inactive. Therefore, subamplifier SA carries out an operation identical to that of active main amplifier MA. (Para. [0022]).

Main amplifier MA of Morishita does not generate a *variable voltage* that *tracks the external power supply EXV* to provide the *variable voltage* on internal power supply line IVL such that in response to the external power supply EXV rising above the *first nominal value*, the *variable further voltage rises in proportion to the external power supply EXV*. In contrast, main amplifier MA provides the internal power supply voltage IntVcc. IntVcc is a constant voltage, not a *variable voltage*. In addition, since IntVcc is a constant voltage, IntVcc does not *track the EXV voltage*. Morishita discloses that internal power supply voltage IntVcc maintains substantially a constant voltage level. (Para. [0070]). The reduction in internal power supply voltage IntVcc caused when external power supply voltage ExtVcc becomes equal to reference

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voltage Vref can be suppressed significantly to maintain internal power supply voltage IntVcc at substantially a constant voltage level. (Para. [0072]). Internal power supply voltage IntVcc is maintained substantially at the level of reference voltage Vref even when lower limit detection signal SIG is pulled down to an L level from an H level. (Para. [0073]). Internal power supply voltage IntVcc can be maintained at substantially a constant voltage level over a wide range of external power supply voltage ExtVcc. (Para. [0087]). An internal power supply voltage generation circuit can be implemented that generates an internal power supply voltage IntVcc of a constant voltage level stably over a wide voltage range of the external power supply voltage. (Para. [0109]). Internal power supply voltage IntVcc can be reliably prevented from rising to a level higher than reference voltage Vref, so that an internal power supply voltage of a desired voltage level can be generated. (Para. [0118]). An internal power supply voltage of a required level can be generated accurately and stably over a wide range of the external power supply voltage. (Para. [0123]).

Accordingly, as clearly disclosed by Morishita, IntVcc is maintained at a constant level (i.e., at the level of Vref) over a wide range of the external power supply voltage EXV. Therefore, Morishita fails to disclose a further device for generating a *variable further voltage* from the first voltage or a voltage derived from it to provide the *variable further voltage* on a second line directly connected to the first line, the *variable further voltage tracking the first voltage such that in response to the first voltage rising above the first nominal value, the variable further voltage rises in proportion to the first voltage*.

In addition, Morishita fails to disclose that with activation control circuit 2 deactivated, IntVcc is maintained at the second nominal value, and with activation control circuit 2 activated, IntVcc rises above the second nominal value in response to the external power supply voltage EXV rising above the first nominal value. In contrast, Morishita discloses that IntVcc remains constant over a wide range of the external power supply voltage in both the activated and deactivated state of activation control circuit 2.

In view of the above, Applicant submits that the above rejection of independent claim 10 under 35 U.S.C. § 102(b) should be withdrawn. Dependent claim 12 has been cancelled.

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Dependent claims 11, 13, 14, 17, 18, and 30 further define patentably distinct independent claim 10. Accordingly, for at least the reasons remarked above with reference to independent claim 10, Applicant believes that these dependent claims are also allowable over the cited reference.

In addition, Applicant submits that Morishita also fails to teach or suggest the further features recited by dependent claim 11 including **“wherein the further voltage generated by the further device can be higher than the voltage generated by the first device.”**

The Examiner submits that Morishita discloses that the voltage generated by main amplifier MA and level adjust circuit 1 can be higher than the voltage generated by subamplifier SA. (Final Office Action, page 4). Morishita discloses that both main amplifier MA and subamplifier SA generate a constant voltage (i.e., at the level of Vref). (Para. [0022]). Therefore, the voltage generated by main amplifier MA cannot be *higher* than the voltage generated by subamplifier SA.

In addition, Applicant submits that Morishita also fails to teach or suggest the further features recited by dependent claim 17 including **“wherein, in the activated state of the further device, the height of the level of a reference voltage used for a voltage regulation circuit device is determined by whichever of the voltages generated by the first and further device, or the voltages derived from them, exhibits the higher level.”**

Morishita discloses that both main amplifier MA and subamplifier SA generate a constant voltage (i.e., at the level of Vref). (Para. [0022]). Therefore, neither the voltage generated by main amplifier MA nor the voltage generated by subamplifier SA can be higher than the other.

In view of the above, Applicant submits that the above rejection of dependent claims 11, 13, 14, 17, 18, and 30 under 35 U.S.C. § 102(b) should be withdrawn. Allowance of claims 10, 11, 13, 14, 17, 18, and 30 is respectfully requested.

For similar reasons as remarked above with reference to claims 10, 11, and 17, Applicant submits that Morishita also fails to teach or suggest the features recited by amended independent claim 19 including **“generating a variable further voltage from the first voltage or a voltage derived from it to provide the variable further voltage on a second line directly connected to the first line, the variable further voltage tracking the first voltage such that in response**

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to the first voltage rising above the first nominal value, the variable further voltage rises in proportion to the first voltage, wherein the further voltage can be higher than the constant voltage generated from the first voltage or the voltage derived from it; and changing the essentially constant voltage to provide the second voltage having the second nominal value in a first state and changing the greater of the essentially constant voltage and the variable further voltage to provide the second voltage in a second state, wherein in the second state the second voltage rises above the second nominal value in response to the first voltage rising above the first nominal value.”

In view of the above, Applicant submits that the above rejection of independent claim 19 under 35 U.S.C. § 102(b) should be withdrawn. Dependent claim 20 has been cancelled. Allowance of claim 19 is respectfully requested.

For similar reasons as remarked above with reference to independent claim 10, Applicant submits that Morishita also fails to teach or suggest the features recited by amended independent claim 21 including **“means for generating a tracking voltage from the first voltage that tracks the first voltage such that in response to the first voltage rising above the first nominal value, the tracking voltage rises in proportion to the first voltage;” “a further device for generating a variable further voltage from the tracking voltage to provide the variable further voltage on a second line directly connected to the first line;” and “wherein in the deactivated state, the second voltage is maintained at the second nominal value, and wherein in the activated state, the second voltage rises above the second nominal value in response to the first voltage rising above the first nominal value.”**

In view of the above, Applicant submits that the above rejection of independent claim 21 under 35 U.S.C. § 102(b) should be withdrawn. Dependent claim 23 has been cancelled. Dependent claims 22, 24-26, 28, 29, and 31 further define patentably distinct independent claim 21. Accordingly, for at least the reasons remarked above with reference to independent claim 21, Applicant believes that these dependent claims are also allowable over the cited reference.

In addition, for similar reasons as remarked above with reference to claim 11, Applicant submits that Morishita also fails to teach or suggest the further features recited by dependent

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claim 22 including “**wherein the further voltage generated can be higher than the voltage generated by the first device.**”

In addition, for similar reasons as remarked above with reference to claim 17, Applicant submits that Morishita also fails to teach or suggest the further features recited by dependent claim 28 including “**wherein, in the activated state of the further device, the height of the level of a reference voltage used for a voltage regulation circuit device is determined by whichever of the voltages generated by the first and further device exhibits the higher level.**”

In view of the above, Applicant submits that the above rejection of dependent claims 22, 24-26, 28, 29, and 31 under 35 U.S.C. § 102(b) should be withdrawn. Allowance of claims 21, 22, 24-26, 28, 29, and 31 is respectfully requested.

For similar reasons as remarked above with reference to independent claim 10, Applicant submits that Morishita also fails to teach or suggest the features recited by amended independent claim 32 including “**a second reference voltage generator configured to generate a tracking voltage from the first voltage that tracks the first voltage such that in response to the first voltage rising above the first nominal value, the tracking voltage rises in proportion to the first voltage**” and “**wherein with the device deactivated, the second voltage is maintained at a second nominal value, and wherein with the device activated, the second voltage rises above the second nominal value in response to the first voltage rising above the first nominal value.**”

In view of the above, Applicant submits that the above rejection of independent claim 32 under 35 U.S.C. § 102(b) should be withdrawn. Allowance of claim 32 is respectfully requested.

Added Claims

Claims 33-35 have been added. No new matter has been added. Dependent claims 33-35 further define patentably distinct independent claim 32 and are further distinguishable over the cited reference. Accordingly, Applicant believes that these dependent claims are also allowable over the cited reference. Allowance of claims 33-35 is respectfully requested.

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CONCLUSION

In view of the above, Applicant respectfully submits that pending claims 10, 11, 13, 14, 17-19, 21, 22, 24-26, and 28-35 are in form for allowance and are not taught or suggested by the cited references. Therefore, reconsideration and withdrawal of the rejections and allowance of claims 10, 11, 13, 14, 17-19, 21, 22, 24-26, and 28-35 is respectfully requested.

No fees are required under 37 C.F.R. 1.16(h)(i). However, if such fees are required, the Patent Office is hereby authorized to charge Deposit Account No. 50-0471.

Please consider this a Petition for Extension of Time for a sufficient number of months to enter these papers, if appropriate. At any time during the pendency of this application, please charge any additional fees or credit overpayment to Deposit Account No. 50-0471.

The Examiner is invited to contact the Applicant's representative at the below-listed telephone numbers to facilitate prosecution of this application.

Any inquiry regarding this Amendment/Reply should be directed to Steven E. Dicke at Telephone No. (612) 573-2002, Facsimile No. (612) 573-2005. In addition, all correspondence should continue to be directed to the following address:

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Respectfully submitted,

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